

let a pilot engine go before, and a guardian angel behind!"—The South-Eastern trains now run right into the harbour terminus at Folkestone, to the steam-boat station, greatly to the discontent of some, though to the equal convenience of others. A great swing bridge has been thrown across the quay constructed for this purpose. The Company are about to enlarge their station accommodation there, with a view of making Folkestone their great water terminus.—The great North-Western is about to be converted into a huge circulating library, provided with all sorts of mental provender, 'to be consumed on the premises,' in transitu or rather in circuitu. Mr. Huish, the manager, it is said, is entitled to the merit of the suggestion, and at same time, in order to effect a circulation not only of books but of cash, the whole of the stations on the line are to be 'undertaken'—for a very considerable consideration doubtless—by one party, namely, Messrs. Smith and Son, of the Strand. The passenger will have no more to do than merely to select his book at a station-stall, paying the price of it in the meantime—and, after travelling any time or distance on the line, will receive back his cash, less a trifle for perusal, on returning his book at either the same or any other stall. The idea is really a good one, and useful to the public; and when it is considered that six millions of passengers travel annually over the 500 miles of the North-Western, assuredly it ought to be a profitable one, both to the Company and their librarians.—The dividend of the North-Western, to be declared at next meeting, says *Itterpath*, will be, we hear, at the rate of 7 per cent., leaving a surplus of 80,000*l*. The dividend of the Lancashire and Yorkshire will be 6 per cent.; that of Berwick 7 per cent., with a surplus of nearly 100,000*l*; the York and North Midland 7; the Eastern Counties is variously reported, from 5*s*. upwards.—Mr. Andrews, Q.C., has awarded 14*l*. to one farmer and 145*l*. to another, for damage done to buildings and corn-stacks adjoining the Eastern Counties at Needingworth, fired by burning coke from the funnel of the engine of the mail train.—The railway-station at the village of Hatfield Peveril, on the Eastern Counties line, about three miles from Witham, has been destroyed by fire. Being small, and built of wood, it was speedily reduced to ashes, together, it is said, with hooke, tickets, and everything belonging to it, the brick chimney only being left standing. How the fire originated remains a mystery. But the *Ipswich Express* suggests that a cinder from the mail-train may have been the cause, though not likely, from the fact that it passes on the line farthest from the station. It is rather remarkable, adds the same authority, that the company had desired to take down this station altogether, and that considerable hostility had very naturally been shown by the inhabitants of Hatfield at the risk of being subjected to such inconvenience.—On the Liverpool and Bury line recent heavy rains are to blame for considerable damage to works. In many places the embankments have been injured by large portions of earth being washed from the slopes; but more serious mischief has resulted from the same cause, particularly at Wigan, in the partial destruction of an arch over the river Douglas. It is supposed that the headlong current of the Douglas undermined the foundations, and produced this disaster. A breakwater has now been formed in the middle of the river, to destroy the force with which, during heavy rain, it rushes through the arch. Some other bridges have been slightly impaired, and are being strengthened and renewed. A similar arch to the one over the Douglas has since given way at Wethoughton, according to the *Wigan Herald*.—The affairs of the Waterford and Kilkenny Company are now in a condition verging on bankruptcy, with receipts for the last eighteen weeks of only 700*l*., whilst the expenditure amounts to 1,700*l*. This company has raised and expended 250,000*l*., and also a loan of 80,000*l*, obtained from Government.—The first section of the Demerara Railway has just been opened, and the planters are availing themselves largely of the facilities it affords for the transmission of sugar, &c., from their estates.—An electric telegraph is about to be erected between Berlin, Cologne, and Frankfurt-on-the-Maine.

FALL OF RAILWAY ARCHES AT MANCHESTER.

On Saturday week one of the brick arches of the North-Western's "Manchester, South Junction, and Altrincham" line of railway, adjoining Gloucester-street, Oxford-road, Manchester, gave way, and on the ensuing Thursday was followed by two more. The first fell while the centering was in course of removal, but the two latter had not had their centering at all loosened. By the fall of the first, three bricklayer's labourers were killed, and an inquest was therefore held on the bodies, at which it appeared in evidence that the arches which fell were to adjoin a central iron arch in widening the station works over Gloucester-street, and from a turn in the line at that point they were built somewhat askew. The dimensions of the first that fell were 40 feet span in the widest part, with a spring of 5 feet, the thickness of the brickwork being 2 ft. 9 in. It had been built about a month, and was supported by a centering of 12 ribs. Four of these had been removed, when a portion of the arch about 15 feet long at one end, and 7 feet at the other, suddenly gave way.

Mr. George Shoreland, the corporation surveyor, gave it as his opinion that the arch had buckled up just above the spandrels on one side. He had no doubt the center of the arch were correct before the brickwork was laid. The work had been grouted in the usual way with thin mortar, which would render the work more substantial. The fall, he conceived, was entirely accidental.

Mr. G. C. Pauling, civil engineer and railway contractor, said: From a very careful examination of the work and materials, I think they are as good as could be put together. In my opinion, the mortar was composed of one-and-a-half part sand to one part of lime in the arch, and of two-and-a-half parts sand to one of lime in the spandril, but it is difficult to speak with accuracy after the action of the air upon the mortar for a month or six weeks. I believe the cause of the falling of the arch was the recent wet weather. On taking out the outside ribs they would throw a greater weight on the narrow side of the arch, from the backing of the wide end being much heavier. This caused the end to buckle and fall in a mass in Gloucester-street. My opinion is strengthened by the fact that a fracture has taken place in a parallel line with the ribs of the centre.

Mr. William Edwards, joiner, builder, and contractor, said that, taking into consideration the recent wet weather, three weeks were long enough for the centres to be under the arch. I have examined the mortar, which seems to be good, and sufficient for the purpose. I consider it is fully as good as is usually made, and that more care has been taken of it than usual, after having gone through a certain process. Each brick would absorb about a pound of water, and the weight of the moisture, no doubt, pressed the bricks down, and caused the arch to give way.

The jury returned the following verdict:—"That the men were accidentally killed when removing the centres from underneath an arch by the falling in of a portion of the arch, rendered insecure by the recent wet weather."

The contractors for this portion of the works are Messrs. David Bellhouse and Son, who are said to have hitherto escaped all fatal or considerable accident in the progress of their contract.

PATENT RIGHTS—CHIMNEY FLUES.

For the encouragement of arts, and the security of inventors of original discovery, or the application to useful purposes of what may not be even novel in itself, those privileges granted by the Crown are supposed to afford ample protection to the patentee; on looking, however, a little below the surface, we may easily discover the fact that the originator of an useful theory in science or invention in art is frequently thrown out of his justly acquired merits, and debarred from its reward by others, who either boldly pirate or adapt his conceptions to a slightly modified arrangement.

About eight years back, the writer of this article took out a patent for building in the solid walls circular flues of iron-stone-ware, or terra-cotta; he applied them in structures, and found them to answer the purposes of a perfect draught for the smoke and the obviating of concreted soot in chimneys; the material being hard, solid, and extremely durable, resisting the action of both fire and water, he also applied the same tubes for sewers.

The heat acquired and generated in the

chimney accelerated the draught, whilst the smooth surface gave a free flow to the sootage, and the circular form admitted of no deposit.

Having incurred the expense of 120*l*. for the patent, &c., and 500*l*. more for a quantity of the material, which he had conveyed from Burslem, in Staffordshire, to a wharf at Belgrave Basin, London, he then published a pamphlet, and dispersed it widely amongst the architects and builders of the kingdom; from whom some orders and large acknowledgments and admissions of utility were received.

It should be here mentioned that a circular tube of 7 inches in diameter, for conveying the ashes from every stage of a building to a pit in the basement, formed part of the patented application (for a tube can hardly be called an invention). Well, for three years, the wharf was kept open for the sale of the materials, at only 10 per cent. profit on the cost price; a clerk was paid for that period, and yet not more than half of the supply on hand (only 500*l*. worth) was consumed or bought.

It may be supposed that the patented invention was not brought into use—but such was not the fact—for in her Majesty's Palace (Buckingham) they were applied, as they were also in all Mr. Cubitt's, Mr. Seth Smith's, and other wholesale builders' cities of mansions; and they are now applied, or being used, in all the clubs, mansions, Houses of Parliament, or palaces that we see springing up, and assuming the most ornate exteriors that art and expense can accomplish.

Complainant saw all this, and did complain; but he was told to seek an injunction in chancery.

After expending 1,000*l*. on the adventure, he was in no humour to embroil himself further; having been already seven years in that court, and sunk in its morasses 10,000*l*. and upwards in costs only.

At length, however, he submitted to the Commissioners of Sewers samples of his ware, as admirably adapted to sewerage; his views were adopted, and suggestions approved—and the honourable Commissioners gave him 100*l*. for the residue of the flues (9 inches in diameter), which had cost him twice that sum. The office of Sewers has since adopted the plan, finding it eminently effective, but have discovered some other market for the commodity—having never given, nor offered, a contract to their slighted illuminator.

As the natural patron of arts, artists, science, and practical utility, *THE BUILDER* is appealed to for publicity to these wrongs, if not for aid in their redress. "*Sic ros non robis*" was the plaint of the poet long before copyrights or patents were thought of; edicates *apes* (which you may pronounce as you like) might be added by your correspondent, QUONIAM.

I would send you a specimen of my patent flues, but they are now patent in every street in London where sewers are being repaired, and in every large house in progress of construction.

METROPOLITAN COMMISSION OF SEWERS.

A SPECIAL court was held on the 23rd ult., at the house, Greek-street, The Hon. Frederick Hing in the chair.

The late Cases of Cholera at Tooting.—In pursuance of a resolution passed at the last court, the committee, consisting of Capt. Vitch, R.E., Capt. Dawson, R.E., Mr. Johnson, Mr. Hutton, and Mr. Haves, inspected the whole of the drainage of Tooting, on Friday last, and this day presented their report to the court. The conclusion arrived at by the committee was, that it would be inexpedient to remove the penstocks altogether, as exposing the sootage and fæcal matter to atmospheric exhalation would increase, rather than diminish the evil. The committee recommended some temporary measures of relief till the adoption of some general and uniform system of drainage. The report being received.

Mr. C. Johnson said that, as one of the committee, he wished to state in open court, that the committee were struck with the carelessness—if not the recklessness—of any public body, in the choice of such a place as they saw for the almshouses of St. Clement Danes, which appeared to have been purchased at an expense of 400*l*. per acre, with an offensive open ditch close by the property. This work, commenced in error, was defended on the ground that the parish of St. George, Southwark, were in treaty for the adjoining field for a similar